

DT04 Rec'd PCT/PTO 29 SEP 2004

In the claims

The following amendments are made with respect to the claims in the international application PCT/GB03/01499.

This listing of claims will replace all prior versions and listings of claims in this application.

1 (Original). A method for the detection of an analyte in a fluid, which comprises contacting the fluid with a holographic element comprising a medium and a hologram disposed throughout the volume of the medium, wherein an optical characteristic of the element changes as a result of a variation of a physical property occurring throughout the volume of the medium, wherein the variation arises as a result of interaction between the medium and the analyte, and wherein the reaction and the variation are reversible; and detecting any change of the optical characteristic.

2 (Currently amended). ~~A~~The method according to claim 1, wherein the physical property is the size of the medium.

3 (Currently amended). ~~A~~The method according to claim 1-~~or claim 2~~, wherein the optical characteristic is the reflectance, refractance or absorbance of the holographic element.

4 (Currently amended). ~~A~~The method according to ~~any preceding claim 1~~, wherein any change of the optical characteristic is detected as a color change.

5 (Currently amended). ~~A~~The method according to ~~any preceding claim 1~~, wherein any change of the optical characteristic is detected as an intensity change.

6 (Currently amended). ~~A~~The method according to ~~any preceding claim 1~~, wherein the analyte is glucose or lactate.

7 (Currently amended). ~~A~~The method according to ~~any of claims 1 to 5~~ claim 1, wherein the analyte is CO₂ or oxygen.

8 (Currently amended). ~~A~~The method according to ~~any preceding claim 1~~, wherein the contacting comprises passing the fluid continuously over the element.

9 (Currently amended). ~~A~~The method according to ~~any preceding claim 1~~, wherein the fluid is an optical fluid.

10 (Original). A device for the detection of an analyte in a fluid, which comprises a fluid conduit having an inlet, an outlet, and a holographic element over which the fluid can flow, wherein the device also includes a window whereby non-ionising radiation can irradiate the holographic element.

11 (Currently amended). ~~A~~The device according to claim 10, wherein the holographic element is as defined in ~~any of claims 1 to 5~~ comprises a medium and a hologram disposed throughout the volume of the medium, wherein an optical

characteristic of the element changes as a result of a variation of a physical property occurring throughout the volume of the medium, wherein the variation arises as a result of interaction between the medium and the analyte, and wherein the reaction and the variation are reversible.

12 (New). The device, according to claim 11, wherein the physical property is the size of the medium.

13 (New). The device, according to claim 11, wherein the optical characteristic is the reflectance, refractance or absorbance of the holographic element.

14 (New). The device, according to claim 11, wherein any change of the optical characteristic is detected as an intensity change.

15 (New). The device, according to claim 11, wherein any change of the optical characteristic is detected as an intensity change.